



Many of the questions asked on the other non-looping roller coasters (Raging Bull[®], Viper[®], American Eagle[®], and Whizzer[®]) may be applied to this ride. The questions below are for specific use on this ride, and tend to be of a more advanced nature.

1. Explain the propulsion and braking devices for this ride.
2. Compare the initial forward acceleration out of the station with the final acceleration stopping as it is coming into the station. Which acceleration needed more electric current for the linear induction motors?
3. What is the electric current demand necessary to lift a passenger in the first seat up the spiral tower? Do not consider the train or other riders for this calculation. The electric potential for this ride is 440 volts.
4. Using an electronic accelerometer, determine the maximum linear velocity.
5. Using an electronic accelerometer, determine the centripetal acceleration ascending each arm. Compare the magnitudes of the accelerations for going both forward and backward.
6. Using an electronic accelerometer, determine the average centripetal acceleration in the forward spiral.
7. Using a barometer, compare the maximum heights on each segment of the ride. Account for any differences.
8. Does seat position in the train effect the results for Question 7? Explain your findings.
9. From the information in Question 8, compare the gravitational potential energy of a passenger with the kinetic energy of the passenger using the information in Question 4. How much of the mechanical energy is transferred to thermal energy when the train is at the top of the first tower?
10. Compare the acceleration going up the back tower with the acceleration going down the back tower. Explain your findings in terms of Newton's Laws.